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- 1. Codes** .1 Perform work to CURRENT Codes, Construction Standards and Bylaws, including Amendments up to the TENDER closing date
- 2. Description of Work** .1 Work under this Contract covers building envelope refurbishing at Combined Services Building at Sandspit Airport, Sandspit, B.C.
- .2 Work to be performed under this Contract includes, but is not limited to, the following items covered further in the Contract documents:
- .1 Removal and disposal of metal cladding, soffits, air barrier (except where noted), windows, metal doors and sectional metal doors.
- .2 Removal of hazardous materials within the areas of work as defined in the drawings noted in the “Pre-renovation Hazardous Material Survey” prepared by PHH ARC Environmental Ltd. – refer to attached Appendix A
- .3 Existing fixtures, devices, and equipment mounted on the existing cladding are to be removed and reinstalled.
- .1 Relocate existing antennae to temporary supports to facilitate refurbishing of building envelope. Coordinate relocation with NAV Canada, Transport Canada and Departmental Representative. **Maintain in service at all times**, and reinstall at completion.
- .2 New electrical fixtures as specified are to be supplied and installed.
- .4 Remove rust from existing structural channels around overhead door openings.
- .5 Supply and install of air barrier, pre-formed metal cladding, furring and soffits on walls and at insulated canopies. Supply and install preformed metal cladding, furring, waterproof membrane, plywood, and soffits on existing vented canopies, including one additional canopy. Supply and install of fiberglass columns as shown on drawings. Revise existing canopy trusses and parapet.
- .6 Supply and install of new windows, fibreglass reinforced exterior doors, sectional metal doors (using existing tracks – refurbished as required,). Supply new hardware for all doors

and windows. Security film to all glazing as shown on drawings.

2. Description of Work
Continued

- .7 Supply and install insulation between doors or windows and rough opening. Repair vapour barrier. Repair of interior gypsum wallboard, repainting of interior wallboard around openings.
- .8 Removal and replacement of exterior wall mounted and soffit lighting. Supply and Install of one additional wall mounted light fixture and related wiring.
- .9 Supply and install 1 (one) replacement overhead door operator. (Re-use and re-install controllers for other door operators as well as photo-electric safety beams)
- .10 All other work specified herein or noted on drawings.
- .11 "Green" requirements:
 - .1 Use only environmentally responsible green materials/products with no VOC emissions or minimum VOC emissions of indoor off-gassing contaminants for improved indoor air quality - subject of Departmental Representative's approval of submitted MSDS Product Data.
 - .2 Use materials/products containing highest percentage of recycled and recovered materials practicable - consistent with maintaining cost effective satisfactory levels of competition.
 - .3 Adhere to waste reduction requirement for reuse or recycling of waste materials, thus diverting materials from landfill.

3. Contract Documents

- .1 The Contract documents, drawings and specifications are intended to complement each other, and to provide for and include everything necessary for the completion of the work.
- .2 Drawings are, in general, diagrammatic and are intended to indicate the scope and general arrangement of the work.

4. Division of Specifications

- .1 The specifications are subdivided in accordance with the current 6-digit National Master Specifications System.

- .2 A division may consist of the work of more than one subcontractor. Responsibility for determining which subcontractor provides the labour, material, equipment and services required to complete the work rests solely with the Contractor.
 - .3 In the event of discrepancies or conflicts when interpreting the drawings and specifications, the specifications govern.
- 5. Time of Completion** .1 Complete the CSB Refurbishing Project. Work to be completed within 20 weeks after Contract Award.
- 6. Hours of Work** .1 Restrictive as follows:
- .1 Schedule deconstruction, removal and construction work during normal working hours of the building. Monday to Friday between 07:30 and 17:00 hours unless it has been approved by the Departmental Representative.
 - .2 Work will be permitted after hours, weekends and holidays providing that it has been approved by the Departmental Representative and requirements for security have been met.
 - .3 Obtain and pay for a security guard acceptable to the Departmental Representative for any work performed outside of the normal working hours.
- 7. Work Schedule** .1 Carry out work as follows:
- .1 Within 10 working days after Contract award, provide a "phasing bar chart" and a schedule showing anticipated progress stages and final completion of the work within the time period required by the Contract documents. Indicate the following:
 - .1 Submission of shop drawings, product data, MSDS sheets and samples.
 - .2 Commencement and completion of work of each section of the specifications or trade for each phase as outlined.
 - .3 Final completion date within the time period required by the Contract documents.
 - .2 Do not change approved Schedule - without notifying Departmental Representative. Departmental Representative may or may not accept changes in schedule in their sole discretion.

- .3 Interim reviews of work progress based on work schedule will be conducted as decided by Departmental Representative and schedule updated by Contractor in conjunction with and to approval of Departmental Representative.
- 9. Cost Breakdown** .1 Before submitting the first progress claim, submit a breakdown of the Contract lump sum prices in detail as directed by the Departmental Representative and aggregating Contract price.
- 10. Codes, Bylaws, Standards** .1 Perform work in accordance with the National Building Code of Canada (NBC) 2010, and other indicated Codes, Construction Standards and/or any other Code or Bylaw of local application.
- .2 Comply with applicable local bylaws, rules and regulations enforced at the location concerned.
- .3 Meet or exceed requirements of Contract documents, specified standards, codes and referenced documents.
- .4 In any case of conflict or discrepancy, the most stringent requirements shall apply.
- 11. Documents Required** .1 Maintain 1 copy each of the following at the job site:
- .1 Contract drawings.
 - .2 Contract specifications.
 - .3 Addenda to Contract documents.
 - .4 Copy of approved work schedule.
 - .5 Reviewed/approved shop drawings.
 - .6 Change orders.
 - .7 Other modifications to Contract.
 - .8 Field test reports.
 - .9 Reviewed/approved samples.
 - .10 Manufacturers' installation and application instructions.
 - .11 One set of record drawings and specifications for "as-built" purposes.
 - .12 National Building Code of Canada 2010.
 - .13 Current construction standards of workmanship listed in technical Sections.
 - .14 Building Safety Plan.
- 12. Regulatory Requirements** .1 Obtain and pay for Certificates, Licenses and other permits required

by regulatory municipal, provincial or federal authorities to complete the work. (Note that Building Permits are not issued in the Skeena-Queen Charlotte Regional District).

- .2 Provide inspection authorities with plans and information required for issue of acceptance certificates.
- .3 Furnish inspection certificates in evidence that the work installed conforms with the requirements of the authority having jurisdiction.

**13. Contractor's Use
of Site**

- .1 Use of site:
 - .1 The CSB will remain in full operation during the course of work. The contractor shall coordinate and schedule the work so as not to impair normal functions of the CSB. Contractor to provide minimum 48 hours notice to Departmental Representative and Sandspit Regional Airport Authorities of any work that may cause exposure of building occupants to potentially hazardous materials and methods in accordance with Section 01 35 33 - Health and Safety Requirements
 - .2 Assume responsibility for assigned premises for performance of this work.
 - .3 Be responsible for coordination of all work activities on site, including the work of other contractors engaged by the Departmental Representative such as moving contractors and furniture installers.
 - .4 Assume that the building will have no equipment or materials in the "Area of Work" that will hinder the work that is to be performed. The Departmental Representative will be responsible for removing any items that the contractor has indicated are interfering with the Work.
- .2 Perform work in accordance with Contract documents. Ensure work is carried out in accordance with indicated phasing.
- .3 Do not unreasonably encumber site with material or equipment
- .4 Accept liability for damage, safety of equipment and overloading of existing equipment.

14. Examination

- .1 Examine site and be familiar and conversant with existing conditions likely to affect work.

15. Existing Services

- .1 Where work involves breaking into or connecting to existing services, carry out work at times directed by the authorities

having jurisdiction.

**16. Location of
Equipment and
Fixtures**

- .1 Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.
- 2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space, and in accordance with manufacturer's recommendations for safety, access and maintenance.
- .3 Inform Departmental Representative of impending installation and obtain his approval for actual location.
- .4 Submit field drawings or shop drawings to indicate the relative position of various services and equipment when required by the Departmental Representative and/or as specified.

17. Cutting and Patching

- .1 Cut existing surfaces as required to accommodate new work.
- .2 Remove items so shown or specified.
- .3 Do not cut, bore, or sleeve load-bearing members.
- .4 Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.
- .5 Fit work airtight to pipes, sleeves, ducts and conduits.
- .6 Conceal pipes, ducts and wiring in raised floors, wall and ceiling construction of finished areas except where indicated otherwise.
- .7 Patch and make good surfaces cut, damaged or disturbed, to Departmental Representative's approval. Match existing material, colour, finish and texture.
- .8 Install firestops and smoke seals in accordance with ULC-S115, around pipe, ductwork, cables and other objects penetrating fire separations to provide fire resistance not less than the fire resistance of surrounding floor, ceiling, and wall assembly.

- .9 Making good is defined as matching construction and finishing materials and the adjacent surfaces such that there is no visible difference between existing and new surfaces when viewed from 1.5 metres in ambient light, and includes painting the whole surface to the next change in plane.
- 18. Setting Out of Work**
- .1 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated.
- .2 Provide devices needed to lay out and construct work.
- .3 Supply such devices as templates required to facilitate Departmental Representative's inspection of work.
- 19. Acceptance of Substrates**
- .1 Each trade shall examine surfaces prepared by others and job conditions which may affect his work, and shall report defects to the Departmental Representative. Commencement of work shall imply acceptance of prepared work or substrate surfaces.
- 20. Quality of Work**
- .1 Ensure that quality workmanship is performed through use of skilled tradesmen, under supervision of qualified journeyman.
- .2 The workmanship, erection methods and procedures to meet minimum standards set out in the National Building Code of Canada 2010.
- .3 In cases of dispute, decisions as to standard or quality of work rest solely with the Departmental Representative, whose decision is final.
- 21. Works Coordination**
- .1 Coordinate work of subtrades:
- .1 Designate one person to be responsible for review of contract documents and shop drawings and managing coordination of Work.
- .2 Convene meetings between subcontractors whose work interfaces and ensure awareness of areas and extent of interface required.
- .1 Provide each subcontractor with complete plans and specifications for Contract, to assist them in planning and

- carrying out their respective work.
- .2 Develop coordination drawings when required, illustrating potential interference between work of various trades and distribute to affected parties.
 - .1 Pay particularly close attention to overhead work above ceilings and within or near to building structural elements.
 - .2 Identify on coordination drawings, building elements, services lines, rough-in points and indicate location services entrance to site.
- .3 Facilitate meeting and review coordination drawings. Ensure subcontractors agree and sign off on drawings.
- .4 Publish minutes of each meeting.
- .5 Plan and coordinate work in such a way to minimize quantity of service line offsets.
- .6 Submit copy of coordination drawings and meeting minutes to Departmental Representative for information purposes.
- .3 Submit shop drawings and order of prefabricated equipment or rebuilt components only after coordination meeting for such items has taken place.
- .4 Work cooperation:
 - .1 Ensure cooperation between trades in order to facilitate general progress of Work and avoid situations of spatial interference.
 - .2 Ensure that each trade provides all other trades reasonable opportunity for completion of Work and in such a way as to prevent unnecessary delays, cutting, patching and removal or replacement of completed work.
- .5 Ensure disputes between subcontractors are resolved.
- .6 Departmental Representative is not responsible for, or accountable for extra costs incurred as a result of Contractor's failure to coordinate Work.
- .7 Maintain efficient and continuous supervision.

**22. Approval of Shop
Drawings, Product
Data and Samples**

- .1 In accordance with Section 01 33 00, submit the requested shop drawings, product data, MSDS sheets and samples indicated in each of the technical Sections.
- .2 **Allow sufficient time for the following:**
 - .1 Review of product data.
 - .2 Approval of shop drawings.
 - .3 Review of re-submission.
 - .4 Ordering of approved material and/or products - refer to Sections of Divisions 2 to 26.

23. Project Meetings

- .1 Contractor will arrange project meetings and assume responsibility for setting times and recording and distributing minutes.

24. Testing and Inspections

- .1 Particular requirements for inspection and testing to be carried out by testing service or laboratory approved by the Departmental Representative are specified in under various sections.
- .2 The Contractor will appoint and pay for the services of testing agency or testing laboratory as specified, and where required for the following:
 - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
 - .2 Inspection and testing performed exclusively for Contractor's convenience.
 - .3 Testing, adjustment and balancing of conveying systems, mechanical and electrical equipment and systems.
 - .1 Mill tests and certificates of compliance.
 - .2 Tests specified to be carried out by Contractor under the Departmental Representative's supervision.
- .3 Where tests or inspections by designated testing laboratory reveal work is not in accordance with the Contract requirements, Contractor shall pay costs for additional tests or inspections as the Departmental Representative may require to

verify acceptability of corrected work.

- .4 Contractor shall furnish labour and facilities to:
 - .1 Notify Departmental Representative in advance of planned testing.
- .5 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.
- .6 Pay costs for uncovering and making good work that is covered before required inspection or testing is completed and approved by Departmental Representative.
- .7 The Departmental Representative may require, and pay for, additional inspection and testing services not included in Paragraph 24.1.
- .8 Provide Departmental Representative with 2 copies of testing laboratory reports as soon as they are available.

25. Record Documents

- .1 The Departmental Representative will provide 2 sets of drawings, 2 sets of specifications, and 2 copies of opaque drawings for "Record" purposes.
- .2 As work progresses, maintain accurate records to show all deviations from the Contract documents. Note on record specifications, drawings and shop drawings as changes occur. Departmental Representative may review progress periodically. Provide 'working' as built drawings promptly upon request.
- .3 Refer to Section 01 78 00

26. Cleaning

- .1 Refer to Section 01 74 11

27. Dust Control

- .1 Provide temporary dust tight screens or partitions to localize dust generating activities, and for protection of workers, finished areas of work and public.

28. Environmental

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| <u>Protection</u> | .1 | Removal of hazardous materials is to be in accordance with federal, provincial and municipal regulations. Refer to attached Appendix A: “Pre-renovation Hazardous Building Materials Survey Report” prepared by PHH ARC Environmental. |
| | .2 | Prevent extraneous materials from contaminating air beyond construction area, by providing temporary enclosures during work. |
| | .3 | Do not dispose of waste or volatile materials into water courses, storm or sanitary sewers. |
| | .4 | Ensure proper disposal procedures in accordance with all applicable federal, provincial and municipal regulations. |
| 29. <u>Maintenance Materials, Special Tools and Spare Parts</u> | .1 | Specific requirements for maintenance materials, tools and spare parts are specified in individual technical sections of Divisions 02 to 26. |
| 30. <u>Additional Drawings</u> | .1 | The Departmental Representative may furnish additional drawings for clarification. These additional drawings have the same meaning and intent as if they were included with plans referred to in the Contract documents. |
| | .2 | Upon request, Departmental Representative may furnish up to a maximum of 10 sets of Contract documents for use by the Contractor at no additional cost. Should more than 10 sets of documents be required the Departmental Representative will provide them at additional cost. |
| 31. <u>Building Smoking Environment</u> | .1 | Smoking within the building is not permitted. |
| 32. <u>System of Measurement</u> | .1 | The metric system of measurement (SI) will be employed on this Contract. |
| 33. <u>Familiarization with Site</u> | .1 | Before submitting tender, become familiar with all conditions likely to affect the cost of the work. |

**34. Submission of
Tender**

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Submission of a tender is deemed to be confirmation of the fact that the Tenderer has analyzed the Contract documents, and is fully conversant with all conditions.

35. Weather

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The work is to be performed at Sandspit Airport. Weather at the site can be adverse. Refer to Climate Normals in Appendix B. Contractor shall explicitly consider weather in their schedule.

END OF SECTION

1 GENERAL

1.1 GENERAL

- .1 Use new material and equipment unless otherwise specified, equipment and systems.
- .2 Within seven (7) days of written request by Departmental Representative, submit following information for any and all materials and products proposed for supply
 - .1 Name and address of manufacturer
 - .2 Trade name, model, and catalogue number
 - .3 Performance, descriptive, and test data
 - .4 Manufacturer's installation or application instructions
 - .5 Evidence of arrangements to procure

1.2 MANUFACTURER'S INSTRUCTIONS

- .1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods.
- .2 Notify Departmental Representative in writing of any conflict between these specifications and manufacturer's instructions. Departmental Representative will designate which document is to be followed.

1.3 DELIVERY AND STORAGE

- .1 Deliver, store, and maintain packaged material and equipment with manufacturer's seals and labels intact.
- .2 Prevent damage, water damage, adulteration, and soiling of material and equipment during delivery, handling, and storage. Immediately remove rejected material and equipment from site.
- .3 Store material and equipment in accordance with supplier's instructions.
- .4 Touch up damaged factory-finished surfaces to Departmental Representative's satisfaction. Use primer or enamel to match original. Do not paint over name plates.

1.4 SUBSTITUTION AFTER CONTRACT AWARD

- .1 No substitutions are permitted without prior written approval of the Departmental Representative.

- .2 Proposals for substitution may only be submitted after Contract award. Such request must include statements of respective costs of items originally specified and the proposed substitution.

- .3 Proposals will be considered by the Departmental Representative if
 - .1 Products selected by Tenderer from those specified are not available
 - .2 Delivery date of products selected from those specified would unduly delay completion of Contract, or
 - .3 Alternative product to that specified, which is brought to the attention of and considered by Departmental Representative as equivalent to the product specified, will result in a credit to the Contract amount.

- .4 **Should the proposed substitution be accepted either in part or in whole, assume full responsibility and costs when substitution affects other work on the project. Pay for design or drawing changes required as result of substitution.**

- .5 Amounts of all credits arising from approval of the substitutions will be determined by the Departmental Representative, and the Contract Price will be reduced accordingly.

END OF SECTION

1 GENERAL

1.1 GENERAL

- .1 This Section specifies general requirements and procedures for Contractors' submissions of shop drawings, product data, and samples to Departmental Representative for review. Additional specific requirements for submissions are specified in other Sections of these Specifications.
- .2 Do not proceed with work until relevant submissions are reviewed by Departmental Representative.
- .3 Present shop drawings, product data, and product samples in SI Metric units.
- .4 Present shop drawings and product data in electronic PDF format.
- .5 Where items or information are not produced in SI Metric units, converted values are acceptable.
- .6 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submissions.
- .7 Notify Departmental Representative in writing, at the time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .8 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative's review of submission, unless Departmental Representative gives written acceptance of specific deviations.
- .9 Make any changes in submissions which Departmental Representative may require consistent with Contract Documents, and resubmit as directed by Departmental Representative.
- .10 When resubmitting, notify Departmental Representative in writing of any revisions other than those requested by Departmental Representative.

1.2 SUBMISSION REQUIREMENTS

- .1 Coordinate each submission with requirements of work and Contract Documents. Individual submissions will not be reviewed until all related information is available.
- .2 Allow five (5) days for Departmental Representative's review of each submission.
- .3 Accompany submissions with transmittal letter, in duplicate, containing
 - .1 Date
 - .2 Project title and number
 - .3 Contractor's name and address
 - .4 Identification and quantity of each shop drawing, product data, and sample.

- .5 Other pertinent data
- .4 Submissions shall include
 - .1 Date and revision dates
 - .2 Project title and number
 - .3 Name and address of
 - .1 Subcontractor
 - .2 Supplier
 - .3 Manufacturer
 - .4 Contractor's stamp, signed by Contractor's authorized representative, certifying approval of submissions, verification of field measurements, and compliance with Contract Documents.
 - .5 Details of appropriate portions of work as applicable
 - .1 Fabrication
 - .2 Layout, showing dimensions, including identified field dimensions and clearances
 - .3 Setting or erection details
 - .4 Capacities
 - .5 Performance characteristics
 - .6 Standards
 - .7 Operating weight
 - .8 Wiring diagrams
 - .9 Single-line and schematic diagrams
 - .10 Relationship or adjacent work
 - .6 After Departmental Representative's review, distribute copies.

1.3 SHOP DRAWINGS

- .1 Original drawings or modified standard drawings provided by Contractor to illustrate details of portions of work which are specific to project requirements.
- .2 Maximum sheet size: 850mm x 1050mm.
- .3 Shop drawings shall be submitted in electronic form using PDF file format.
- .4 Cross-reference shop drawing information to applicable portions of Contract Documents.

1.4 REVIEW

- .1 The review of shop drawings by Public Works & Government Services Canada (PWGSC) is for sole purpose of ascertaining conformance with general concept.
- .2 This review shall not mean that PWGSC approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
- .3 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for coordination of work of sub-trades.

1.5 MOCK-UPS

- .1 Prepare mock-ups for Work specifically requested in specifications.
- .2 Construct in locations acceptable to Departmental Representative.
- .3 Prepare mock-ups for Departmental Representative's review with reasonable promptness and in orderly sequence, so as to not cause any delay in the Work.
- .4 Failure to prepare mock-up in ample time is not considered sufficient reason for an extension of time and no claim for extension by reason of such default will be allowed.
- .5 Mock-ups may remain as part of Work.

END OF SECTION

1 GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 51 00 – Temporary Facilities
- .2 Section 01 56 00 – Temporary Airside Traffic Markers, Barriers and Delineators

1.2 GENERAL PROTECTION

- .1 Copy will be returned with Departmental Representative's comments.
- .2 Coordinate work so as not to interfere with on-going and regular maintenance activities.
- .3 Provide temporary protection for safe handling of public, personnel, pedestrians, and vehicular traffic. (Refer to Sections 01 51 00, and 01 56 00.)
- .4 Provide radio operator, radio, and vehicle as defined in this Section.

1.3 WORK PLAN

- .1 Work of this Contract shall be conducted in phases to ensure no interruption to the Airport operations.
- .2 Work will be performed during normal working hours.
- .3 Contractor vehicles shall not be run on runway pavement.
- .4 Contractor shall submit a work plan and obtain Departmental Representative's approval before commencing work. Work plan shall detail sequencing, scheduling, and work method for all of the Work of this Contract.

1.4 MOVEMENT OF EQUIPMENT AND PERSONNEL

- .1 The Airport will remain open to all Airport operations. In areas on the airside of the Airport security fence
 - .1 Obtain Airport Manager's approval on scheduling of work.
 - .2 Control movement of equipment and personnel as directed by Departmental Representative.
 - .1 The apron will be operational for aircraft use at all times. Special precautions and clearances must be observed during construction to ensure safety. Work stoppages or removal of construction equipment from certain areas may be required from time to time to

- permit safe movement of aircraft on the live portion of the apron.
 - .2 No equipment or personnel shall infringe within the wingtip clearance line while an aircraft is manoeuvring in the area.
 - .3 All personnel and light equipment should be clear of jet blast during taxiing of aircraft.
- .2 In areas of airport not closed to airport traffic
- .1 Obtain Departmental Representative's and Airport Manager's approval on scheduling of Work.
 - .2 Control movements of equipment and personnel as directed by Departmental Representative.
 - .3 All movement on or near (45 metres from runway edge and 17 metres from taxiway) aircraft operational areas are controlled by, and require communication by Airport escort with, Flight Service Station (FSS).
 - .4 Provide an escort vehicle controlled by a licensed radio operator maintaining radio contact with FSS and visual watch for aircraft traffic.
 - .5 Prior to the first vehicle entering any manoeuvring area that has been closed, in whole or in part, by a NOTAM, radio operator must notify and obtain permission and instructions from FSS, and also must notify FSS upon the last vehicle leaving the closed area. No contact is required for each individual intervening movement provided that
 - .1 Vehicles do not proceed onto or near open sections of manoeuvring area.
 - .2 FSS is notified prior to the first vehicle entering and upon the last vehicle leaving closed area.
 - .6 **Instantly obey all signals from FSS.**
 - .7 Qualified, competent flagpersons, radio operators, and operators of escort vehicles must conform to the following requirements
 - .1 Possess a valid radio operator's licence.
 - .2 Possess a thorough knowledge, as determined by Airport Manager or his representative, of airside safety and procedures of Sandspit Airport.
 - .3 Possess an Airport Operator's Vehicle Permit for Sandspit Airport and a valid driver's licence.

1.5 UNSERVICEABLE AREAS

- .1 Park equipment not in use and stockpile materials so that their tops are below a 50 to 1 ratio from ends of usable landing strip and below 20 to 1 ratio from sides of aircraft traffic areas. Where directed, mark tops with red lights.

1.6 TRENCHING

- .1 Obtain Departmental Representative's written permission to undertake trenching which cannot be completed, backfilled, and sealed within one working day.

1.7 AIRPORT FACILITIES

- .1 Departmental Representative will inform as to any knowledge regarding the location of underground facilities such as cables, pipes, and ducts. Contractor will be responsible for carefully exposing underground facilities without risking damage to facilities prior to commencing excavations. Any facilities damaged will be repaired immediately at Contractor's expense.

1.8 OPERATIONAL REQUIREMENTS

- .1 Sandspit Airport must remain operational throughout the duration of this Contract.
- .2 Access to and from Operational and Emergency Equipment must remain operational during duration of this contract.

1.9 FOREIGN OBJECT DEBRIS

- .1 Take steps to secure or contain all materials, debris and equipment to ensure that items do not blow onto the operation areas of the airport.
- .2 Construction materials, waste, tools or equipment must not be able permitted to leave the work area or enter portions of the airport open to operations under any circumstances. Such materials shall be considered foreign object debris (FOD) and shall be IMMEDIATELY reported to the airport manager. Contractor will be liable for any costs associated with FOD discharge including investigation and clean-up.

END OF SECTION

1. REFERENCES

- .1 Government of Canada:
 - .1 Canada Labour Code – Part II
 - .2 Canada Occupational Health and Safety Regulations.
- .2 National Building Code of Canada (NBC):
 - .1 Part 8, Safety Measures at Construction and Demolition Sites.
- .3 Canadian Standards Association (CSA): as amended:
 - .1 CSA Z797-2009 Code of Practice for Access Scaffold.
 - .2 CSA S269.1-1975 (R2003) Falsework for Construction Purposes.
 - .3 CSA-S350-M1980 (R2003), Code of Practice for Safety in Demolition of Structures.
- .4 Fire Protection Engineering Services, HRSDC:
 - .1 FCC No. 301, Standard for Construction Operations.
 - .2 FCC No. 302, Standard for Welding and Cutting.
- .5 American National Standards Institute (ANSI):
 - .1 ANSI A10.3, Operations – Safety Requirements for Powder-Actuated Fastening Systems.
- .6 Province of British Columbia:
 - .1 Workers Compensation Act Part 3 - Occupational Health and Safety.
 - .2 Occupational Health and Safety Regulation.

2. RELATED SECTIONS

- .1 Refer to the following current NMS sections as required:
 - .1 General Instructions Section 01 11 55
 - .2 Airports in Use Section 01 35 27
 - .3 Sustainable Requirements – Construction Section 01 47 15
 - .4 Temporary Facilities: Section 01 51 00
 - .5 Temporary Airside Traffic Markers,
Barriers and Delineators: Section 01 56 00
 - .6 Asbestos Abatement – Minimum
Precautions: Section 02 82 00.01

3. WORKERS' COMPENSATION BOARD COVERAGE

- .1 Comply fully with the Workers' Compensation Act, regulations and orders made pursuant thereto, and any amendments up to the completion of the work.
- .2 Maintain Workers' Compensation Board coverage during the term of the Contract, until and including the date that the Certificate of Final Completion is issued.

4. COMPLIANCE WITH REGULATIONS

- .1 PWGSC may terminate the Contract without liability to PWGSC where the Contractor, in the opinion of PWGSC, refuses to comply with a requirement of the Workers' Compensation Act or the Occupational Health and Safety Regulations.
- .2 It is the Contractor's responsibility to ensure that all workers are qualified, competent and certified to perform the work as required by the Workers' Compensation Act or the Occupational Health and Safety Regulations

5. SUBMITTALS

- .1 Submit to Departmental Representative submittals listed for review. As listed in each section and drawings.
- .2 Work affected by submittal shall not proceed until review is complete.
- .3 Submit the following:
 - .1 Health and Safety Plan.
 - .2 Copies of reports or directions issued by federal and provincial health and safety inspectors.
 - .3 Copies of incident and accident reports.
 - .4 Complete set of Material Safety Data Sheets (MSDS), and all other documentation required by Workplace Hazardous Materials Information System (WHMIS) requirements.
 - .5 Emergency Procedures.
- .4 The Departmental Representative will review the Contractor's site-specific project Health and Safety Plan and emergency procedures, and provide comments to the Contractor within 5 days after receipt of the plan. Revise the plan as appropriate and resubmit to Departmental Representative.
- .5 Medical surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement

of work, and submit additional certifications for any new site personnel to Departmental Representative.

- .6 Submission of the Health and Safety Plan, and any revised version, to the Departmental Representative is for information and reference purposes only. It shall not:
 - .1 Be construed to imply approval by the Departmental Representative.
 - .2 Be interpreted as a warranty of being complete, accurate and legislatively compliant.
 - .3 Relieve the Contractor of his legal obligations for the provision of health and safety on the project.

6. RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract documents, applicable Federal, Provincial, Territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan
- .3 Assume responsibility as the Prime Contractor for work under this contract.

7. HEALTH AND SAFETY COORDINATOR

- .1 The Health and Safety Coordinator must:
 - .1 Be responsible for completing all health and safety training, and ensuring that personnel that do not successfully complete the required training are not permitted to enter the site to perform work.
 - .2 Be responsible for implementing, daily enforcing, and monitoring the site-specific Health and Safety Plan.
 - .3 Be on site during execution of work.

8. GENERAL CONDITIONS

- .1 Provide safety barricades and lights around work site as required to provide a safe working environment for workers and protection for pedestrian and vehicular traffic.
- .2 Ensure that non-authorized persons are not allowed to circulate in designated construction areas of the work site.

- .1 Provide appropriate means by use of barricades, fences, warning signs, traffic control personnel, and temporary lighting as required.
- .2 Secure site at night time or provide security guard as deemed necessary to protect site against entry.

9. PROJECT/SITE CONDITIONS

- .1 Work at site will involve contact with:
 - .1 Aircraft.
 - .2 Airport equipment and vehicles.
- .2 Coordinate work on site with Mr. Warren Foster, Airport Maintenance Specialist, Tel. 250-637-5718

10. REGULATORY REQUIREMENTS

- .1 Comply with specified codes, acts, bylaws, standards and regulations to ensure safe operations at site.
- .2 In event of conflict between any provision of the above authorities, the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, the Departmental Representative will advise on the course of action to be followed.

11. WORK PERMITS

- .1 Obtain specialty permits related to project before start of work

12. FILING OF NOTICE

- .1 The General Contractor is to complete and submit a Notice of Project as required by provincial authorities.
- .2 Provide copies of all notices to the Departmental Representative.

13. HEALTH AND SAFETY PLAN

- .1 Conduct a site-specific hazard assessment based on review of Contract documents, required work, and project site. Identify any known and potential health risks and safety hazards.

- .2 Prepare and comply with a site-specific project Health and Safety Plan based on hazard assessment, including, but not limited to, the following:
 - .1 Primary requirements:
 - .1 Contractor's safety policy.
 - .2 Identification of applicable compliance obligations.
 - .3 Definition of responsibilities for project safety/organization chart for project.
 - .4 General safety rules for project.
 - .5 Job-specific safe work, procedures.
 - .6 Inspection policy and procedures.
 - .7 Incident reporting and investigation policy and procedures.
 - .8 Occupational Health and Safety Committee/Representative procedures.
 - .9 Occupational Health and Safety meetings.
 - .10 Occupational Health and Safety communications and record keeping procedures.
 - .2 Summary of health risks and safety hazards resulting from analysis of hazard assessment, with respect to site tasks and operations which must be performed as part of the work.
 - .3 List hazardous materials to be brought on site as required by work.
 - .4 Indicate engineering and administrative control measures to be implemented at the site for managing identified risks and hazards.
 - .5 Identify personal protective equipment (PPE) to be used by workers.
 - .6 Identify personnel and alternates responsible for site safety and health.
 - .7 Identify personnel training requirements and training plan, including site orientation for new workers.
- .3 Develop the plan in collaboration with all subcontractors. Ensure that work/activities of subcontractors are included in the hazard assessment and are reflected in the plan.
- .4 Revise and update Health and Safety Plan as required, and re-submit to the Departmental Representative.
- .5 Departmental Representative's review: the review of Health and Safety Plan by Public Works and Government Services Canada (PWGSC) shall not relieve the Contractor of responsibility for errors or omissions in final Health and Safety Plan or of responsibility for meeting all requirements of construction and Contract documents.

14. EMERGENCY PROCEDURES

- .1 List standard operating procedures and measures to be taken in emergency situations. Include an evacuation plan and emergency contacts (i.e. names/telephone numbers) of:
 - .1 Designated personnel from own company.
 - .2 Regulatory agencies applicable to work and as per legislated regulations.
 - .3 Local emergency resources.
 - .4 Departmental Representative and Sandspit Airport staff.
- .2 Include the following provisions in the emergency procedures:
 - .1 Notify workers and the first-aid attendant, of the nature and location of the emergency.
 - .2 Evacuate all workers safely.
 - .3 Check and confirm the safe evacuation of all workers.
 - .4 Notify the fire department or other emergency responders.
 - .5 Notify adjacent workplaces or residences which may be affected if the risk extends beyond the workplace.
 - .6 Notify Departmental Representative and Sandspit Airport staff.
- .3 Provide written rescue/evacuation procedures as required for, but not limited to:
 - .1 Work at high angles.
 - .2 Work in confined spaces or where there is a risk of entrapment.
 - .3 Work with hazardous substances.
 - .4 Underground work.
 - .5 Work on, over, under and adjacent to water.
 - .6 Workplaces where there are persons who require physical assistance to be moved.
- .4 Design and mark emergency exit routes to provide quick and unimpeded exit.
- .5 At least once each year, emergency drills must be held to ensure awareness and effectiveness of emergency exit routes and procedures, and a record of the drills must be kept.
- .6 Revise and update emergency procedures as required, and re-submit to the Departmental Representative.

15. HAZARDOUS PRODUCTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous materials, and

regarding labelling and provision of Material Safety Data Sheets (MSDS) acceptable to the Departmental Representative and in accordance with the Canada Labour Code.

- .2 Where use of hazardous and toxic products cannot be avoided:
 - .1 Advise Departmental Representative beforehand of the product(s) intended for use. Submit applicable MSDS and WHMIS documents as per Section 01 33 00.
 - .2 In conjunction with Departmental Representative, schedule to carry out work during "off hours" when tenants have left the building.
 - .3 Provide adequate means of ventilation in accordance with Section 01 47 15.

16. ASBESTOS HAZARD

- .1 Modifications to spray- or trowel-applied asbestos surfaces can be hazardous to health.
- .2 Removal and handling of asbestos will be performed in accordance with federal, provincial and municipal regulations.

17. REMOVAL OF LEAD-CONTAINING PAINTS

- .1 All paints containing TCLP lead concentrations above 5 ppm are classified as hazardous.
- .2 Carry out demolition activities involving lead-containing paints in accordance with applicable provincial regulations.

18. AMMONIA GAS

- .1 Excavation activities in areas adjacent to aprons and taxiways of certain airports have resulted in encounters with ammonia gas.
 - .1 Ammonia gas results from decomposition of urea, used for de-icing purposes, which seeps through surface pavement joints and cracks to become trapped in sometimes heavily concentrated pockets in underlying and adjacent soil.
- .2 Advise all workers, before any such excavation work, that should the smell of ammonia be detected at any time when working in excavations, then the workers must immediately leave the excavation area until such time as the volume of ammonia can be measured and appropriate safety measures are taken.
- .3 Ensure that all workers are aware that, at certain levels of concentration, unprotected exposure to ammonia can result in nose and throat irritation, breathing difficulty, and

eye and skin irritation. Prolonged exposure without adequate protection could result in serious and permanent damage to personal health.

- .4 Notify Departmental Representative immediately upon detection of ammonia.
- .5 The Departmental Representative will act to have the ammonia gas concentration measured immediately and, depending upon the results, will direct procedures to be adopted for the safety of all personnel in adjacent areas.

19. ELECTRICAL SAFETY REQUIREMENTS

- .1 Comply with authorities and ensure that, when installing new facilities or modifying existing facilities, all electrical personnel are completely familiar with existing and new electrical circuits and equipment and their operation.
 - .1 Before undertaking any work, coordinate required energizing and de-energizing of new and existing circuits with Departmental Representative.
 - .2 Maintain electrical safety procedures and take necessary precautions to ensure safety of all personnel working under this Contract, as well as safety of other personnel on site.

20. ELECTRICAL LOCKOUT

- .1 Develop, implement and enforce use of established procedures to provide electrical lockout and to ensure the health and safety of workers for every event where work must be done on any electrical circuit or facility.
- .2 Prepare the lockout procedures in writing, listing step-by-step processes to be followed by workers, including how to prepare and issue the request / authorization form. Have procedures available for review upon request by the Departmental Representative.
- .3 Keep the documents and lockout tags at the site and list in a log book for the full duration of the Contract. Upon request, make such data available for viewing by Departmental Representative or by any authorized safety representative.

21. OVERLOADING

- .1 Ensure no part of work is subjected to a load which will endanger its safety or will cause permanent deformation.

22. FALSEWORK

- .1 Design and construct falsework in accordance with CSA S269.1-1975 (R2003).

23. SCAFFOLDING

- .1 Design, construct and maintain scaffolding in a rigid, secure and safe manner, in accordance with CSA Z797-2009 and B.C. Occupational Health and Safety Regulations.

24. CONFINED SPACES

- .1 Carry out work in confined spaces in compliance with provincial regulations.

25. POWDER-ACTUATED DEVICES

- .1 Use powder-actuated devices in accordance with ANSI A10.3 only after receipt of written permission from the Departmental Representative.

26. FIRE SAFETY AND HOT WORK

- .1 Obtain Departmental Representative's authorization before any welding, cutting or any other hot work operations can be carried out on site.
- .2 Hot work includes cutting/melting with use of torch, flame heating roofing kettles, or other open flame devices and grinding with equipment which produces sparks.

27. FIRE SAFETY REQUIREMENTS

- .1 Store oily/paint-soaked rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
- .2 Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada.

28. FIRE PROTECTION AND ALARM SYSTEM

- .1 Fire protection and alarm systems shall not be:
 - .1 Obstructed.

- .2 Shut off.
- .3 Left inactive at the end of a working day or shift.
- .2 Do not use fire hydrants, standpipes and hose systems for purposes other than firefighting.
- .3 Be responsible/liable for costs incurred from the fire department, the building owner and the tenants, resulting from false alarms.

29. UNFORESEEN HAZARDS

- .1 Should any unforeseen or peculiar safety-related factor, hazard or condition become evident during performance of the work, immediately stop work and advise the Departmental Representative verbally and in writing.

30. POSTED DOCUMENTS

- .1 Post legible versions of the following documents on site:
 - .1 Health and Safety Plan.
 - .2 Sequence of work.
 - .3 Emergency procedures.
 - .4 Site drawing showing project layout, locations of the first-aid station, evacuation route and marshalling station, and the emergency transportation provisions.
 - .5 Notice of Project.
 - .6 Floor plans or site plans.
 - .7 Notice as to where a copy of the Workers' Compensation Act and Regulations are available on the work site for review by employees and workers.
 - .8 Workplace Hazardous Materials Information System (WHMIS) documents.
 - .9 Material Safety Data Sheets (MSDS).
 - .10 List of names of Joint Health and Safety Committee members, or Health and Safety Representative, as applicable.
- .2 Post all Material Safety Data Sheets (MSDS) on site, in a common area, visible to all workers and in locations accessible to tenants when work of this Contract includes construction activities adjacent to occupied areas.
- .3 Postings should be protected from the weather, and visible from the street or the exterior of the principal construction site shelter provided for workers and equipment, or as approved by the Departmental Representative.

31. MEETINGS

- .1 Attend health and safety pre-construction meeting and all subsequent meetings called by the Departmental Representative.**

32. CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by the Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance with health and safety issues identified.
- .3 The Departmental Representative may issue a “stop work order” if non-compliance of health and safety regulations is not corrected immediately or within posted time. The General Contractor/subcontractors will be responsible for any costs arising from such a “stop work order”.

END OF SECTION

1 GENERAL

1.1 SECTION INCLUDES

- .1 This Section includes specific environmental and sustainable development requirements for building materials, products and systems needed to ensure that this project complies with green design processes and clients' sustainable development plan.

1.2 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures
- .2 Section 01 74 19 - Waste Management and Disposal

1.3 REFERENCES

- .1 National Building Code of Canada (NBC)-2010, including all amendments up to tender closing date.
- .2 American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
 - .1 ASHRAE 62-2001, Ventilation for Acceptable Indoor Air Quality
 - .2 ASHRAE 52.2-1999, Method of Testing General Ventilation Air Cleaning Devices for Removal Efficiency by Particle Size
 - .3 ASHRAE 129-1997, Measuring Air-Change Effectiveness
- .3 Canadian Standards Association (CSA International)
 - .1 CSA-A440.1-2000, Windows - User Selection Guide
- .4 Environmental Choice Program
 - .1 CCD-016-97, Thermal Insulation
 - .2 CCD-017-98, Acoustical Products
 - .3 CCD-045-95, Sealant and Caulking Compounds
 - .4 CCD-046-95, Adhesives
 - .5 CCD-047-98, Surface Coatings
 - .6 CCD-047-98, Surface Coatings – Recycled Water Borne
- .5 National Air Duct Cleaners Association (NADCA)
 - .1 NADCA ACR-2002, Assessment Cleaning and Restoration
 - .2 NADCA 05-1997, Requirements for the Installation of Service Openings in HVAC Systems

- .6 Sheet Metal and Air Conditioning National Contractors Association (SMACNA)
 - .1 SMACNA IAQ Guideline for Occupied Buildings Under Construction, 1995

1.4 SUBMITTALS

- .1 Provide submittals for work in accordance with Section 01 33 00.
- .2 Submittals required
 - .1 Submit name and experience of Green design facilitator to Departmental Representative for approval.
 - .2 Compliance Report indicating requirement to purchase energy efficient and environmentally benign products.
 - .3 Use Report indicating understanding of requirement to use materials and methods of construction, which improve energy and water efficiency, reduce hazardous by-products, and use recycled materials, or materials, which can be reused.
 - .4 Building systems and material evaluation report.
- .3 Material Safety Data Sheets (MSDS)
 - .1 Submit Material Safety Data Sheets (MSDS) in accordance with Section 01 33 00 for the following products. Indicate VOC emissions, prior to installation or use
 - .1 Adhesives
 - .2 Sealants
 - .3 Insulating materials
 - .4 Fireproofing or fire stopping materials
 - .5 Paints
 - .6 Floor and wall patching or levelling materials
 - .2 MSDS sheets to comply with Occupational Health and Safety requirements.
- .4 Construction Schedule
 - .1 Submit schedule of construction in accordance with Section 01 33 00, prior to start of work, in coordination with scheduling requirements, including
 - .1 Sequence of finish applications and allowances for curing times.
 - .2 Identification of finish types. See Table A.
 - .3 Schedule and duration of proposed temporary ventilation.

- .4 Delivery schedules of manufactured materials which are anticipated to off-gas in timely manner, which will allow for airing of those materials prior to their scheduled installation.
- .5 Indicate and schedule commissioning procedures and temporary usages of building mechanical systems, identifying types of filtration and schedule for filter replacement.
- .5 IAQ Management Plan
 - .1 Submit Indoor Air Quality (IAQ) Management Plan in accordance with Section 01 33 00, for construction and preoccupancy phases of building.

1.5 HAZARDOUS MATERIALS

- .1 Take measures to ensure chemical spills do not enter drains.
- .2 Provide proper storage and containment of hazardous materials.
 - .1 Design and construction of storage spaces for hazardous materials in accordance with NBC-2010 and local building and fire codes.
 - .2 Provide ventilation of areas, which contain potential sources of air contamination. Comply with standards for storage of flammable, combustible, and hazardous materials, explosives, compressed gas cylinders, and reactive, corrosive, and oxidizing materials.
 - .3 Storage conditions, ventilation requirements, construction materials storage areas, containers, drums and tanks, compatibility issues, and labelling: in accordance with federal and municipal guidelines supplemented as follows
 - .1 Confine storage of chemicals and hazardous wastes to designated areas with security of access.
 - .2 Provide access to hose bib and water for mixing concentrated chemicals.
 - .3 Provide containment to prevent spills from entering drains.
 - .4 Provide venting to exterior.
 - .5 Keep storage areas under negative pressure, where possible.

1.6 EROSION AND SEDIMENTATION CONTROL

- .1 Take measures to prevent loss of soil by storm water runoff.
- .2 Protect existing catch basins and drains.

- .3 Comply with BC Ministry of Environment “A users guide to working in and around water – Understanding the Regulation under British Columbia’s Water Act.”
- .4 Existing drainage system must not be used for disposal of construction waster or chemicals.

1.7 REDUCING SITE DISTURBANCES

- .1 When building is to be on previously undeveloped site comply with following requirements
 - .1 Avoid major alterations to sensitive topography, vegetation and wildlife habitat in areas indicated.
 - .2 Create traffic patterns that cause minimum site disruptions, as per Departmental Representative's approval.

1.8 BUILDING ENVELOPE

- .1 Provide insulation to optimize reduction of heat losses or heat gains through building envelope.
 - .1 Insulation to levels specified in Model National Energy Code (MNEC).
- .2 Maintain integrity of building envelope using air barriers and vapour retarders and avoid thermal bridging to provide thermal comfort and prevent condensation.
 - .1 Air barrier: to NBC 2010, Article 5.3.
 - .2 Air leakage through air barrier system within roof area: not to exceed 0.15 l/s*m² @75Pa.
 - .3 Air leakage through air barrier system within roof area: not to exceed 0.15 l/s*m² @ 75Pa.
 - .4 Air leakage through air barrier system within area of exterior walls (excluding window): not to exceed 0.30 l/s*m² @ 75Pa.
 - .5 Air leakage through floor: not to exceed 0.10 l/s*m²@ 75Pa.
 - .6 Air leakage through windows: not to exceed limits specified in CSA-A440S1.

1.9 INDOOR AIR QUALITY

- .1 Provide moisture control methods within building to prevent mould growth.
- .2 IAQ Performance

- .1 Comply with following minimum indoor air performance requirements. Total volatile organic compounds *level* requirements include formaldehyde.
 - .1 Total Volatile Organic Compounds Emissions Rate Standard
 - .1 Product emission rate measured in mg/m²/hr.
 - .2 Indoor air concentration levels greater than 0.5 mg/m³ of total volatile organic compounds at anticipated loading 30 days after installation
 - .2 4-Phenyl Cyclohexene (4-PC) Emission Rate Standard
 - .1 Product emission rate measured in mg/m²/hr.
 - .2 Indoor air concentration levels greater than 1 ppb at anticipated loading 30 days after installation
- .2 Indoor Environmental Quality
 - .1 Reduce quantity of indoor air contaminants that are odorous or potentially irritating to provide installer and occupant health and comfort as indicated.
 - .2 Avoid exposure of building occupants to potentially hazardous chemicals that adversely impact air quality.
- .3 Construction IAQ Management Plan
 - .1 Develop and implement Indoor Air Quality (IAQ) Management Plan for construction and preoccupancy phases of building as follows:
 - .1 Adopt IAQ management plan during construction procedures, including
 - .1 Protection of HVAC system during construction to control pollutant sources, and interrupt pathways for contamination.
 - .2 Sequencing of materials installation to ensure dissipation of high emissions from finishes that off-gas unacceptably high quantities of potentially harmful materials during curing to avoid contamination of absorptive materials.
 - .3 Apply Type 1 interior finishes and allow these finishes to completely cure according to intervals and times stated in respective finish manufactures printed instructions before commencing installation of any Type 2 materials in same area.
 - .4 Do not store any Type 2 materials in areas where installation or curing of Type 1 materials is in progress.
 - .5 Table A.

TABLE A	
<p>Type 1 - Materials and Finishes Materials and finishes which have potential for short term levels of off-gassing from chemicals inherent in their manufacturing process, or which are applied in a form requiring vehicles or carriers for spreading which release a high level of particulate matter in the process of installation and/or curing.</p>	<p>Type 1 materials and finishes include, but are not limited to the following:</p> <ul style="list-style-type: none"> ▪ Composite wood products, including particleboard and plywood from which millwork, wood paneling, doors or furniture may be fabricated. ▪ Adhesives, sealants, and glazing compounds. ▪ Wood preservatives, wood finishes, primers and paints and paint like wall finishes. ▪ Control and/or expansion joint fillers, firestopping materials, and caulking. ▪ Hard finishes requiring adhesives installation including, but not limited to plastic laminate, linoleum and rubber tile. ▪ Gypsum board and associated finish processes and products.
<p>Type 2 - Materials and Finishes Soft materials and finishes which are woven, fibrous, or porous in nature and may absorb chemicals off-gassed by Type 1 materials and finishes, or may be adversely affected by airborne particulate. These materials have the potential to become sinks for deleterious substances which may be released much later, or act as collectors of contaminants that may promote subsequent bacterial growth.</p>	<p>Type 2 materials and finishes include, but are not limited to the following:</p> <ul style="list-style-type: none"> ▪ Carpet and underpadding, and other woven or fibrous floor finishes. ▪ Fabric wall coverings. ▪ Insulation materials exposed to the airstream. ▪ Acoustic ceiling materials. ▪ Furnishings with fabric coverings.

1.10 GENERAL CONSTRUCTION MATERIALS / PRACTICES

.1 Materials and Resources

- .1 Use uncontaminated demolition materials for fill and hardcore and/or granular base.

- .2 Incorporate reused building materials as indicated.
- .3 Use products and services that meet criteria of EcoLogo guidelines.
- .4 Provide list of non-endorsed products and services, provided the green labelled product or services are capable of meeting specified performance requirements.
- .2 Storage and Collection of Recyclables
 - .1 Provide separate storage/handling facilities for consumer recyclables including used paper, newspaper, newsprint, cardboard, glass, metal and plastic.
 - .2 Provide on-site centralized area for composting organic waste as indicated.
 - .3 Provide area for waste compactor, size and location as indicated.
- .3 Construction Waste Management
 - .1 Follow recommendations and requirements of this projects construction, renovation, and demolition (CRD) waste management plan in accordance with Section 01 74 19.
 - .2 Resource Reuse
 - .1 Use materials that have been remanufactured for this project's building systems and materials.
 - .3 Recycled Content
 - .1 Use systems and materials with post-consumer and post-industrial recycled content.
 - .4 Local/Regional Materials
 - .1 Use systems and materials having 25% of total percentage of products or materials manufactured within 1600 kilometres of project site.
 - .5 Rapidly Renewable Materials
 - .1 Use systems and materials that originate from renewable sources.
 - .6 Wood
 - .1 Use lumber sourced from independently certified well-managed forests in accordance with CSA or Forestry Stewardship Council.
 - .2 Materials made from composite wood materials or agricultural products: not contain urea-formaldehyde resins.
 - .7 Durability
 - .1 Use durable building systems and materials
 - .1 Requiring low maintenance (painting, retreatment, and waterproofing)
 - .2 Having minimal environmental impact

1.11 INSULATION

- .1 Utilize insulation materials meeting following requirements
 - .1 Board-type thermal insulation materials must contain, when calculated on 12-month rolling basis
 - .2 Over 35% recycled material by weight of finished product if made from glass fibre
 - .3 Over 45% recycled material by weight of finished product if made from mineral composition
 - .2 Loose-fill and spray-on thermal insulation materials must contain, when calculated on 12-month rolling basis
 - .1 Over 75% recycled material by weight of finished product, if made from cellulose fibre
 - .2 Over 35% recycled material by weight of finished product if made from glass fibre
 - .3 Over 50% recycled material by weight of finished product, if made from mineral wool
- .3 Use insulation materials manufactured or installed that do not include CFCs.

1.12 PAINTS, STAINS AND VARNISHES

- .1 Use paints and coatings that meet or exceed VOC limits established by Environmental Choice Programs guideline for water borne surface coatings CCD-047 and CCD-048.

1.13 SEALANTS, ADHESIVES AND COMPOUNDS

- .1 Use adhesives that meet or exceed VOC limits established by Environmental Choice Programs guideline for adhesives CCD-046.
- .2 Use sealant products that meet or exceed VOC limits established by Environmental Choice Programs guideline for sealants, CCD-045.

END OF SECTION

1 GENERAL

1.1 ACCESS

- .1 Provide and maintain adequate access to project site.
- .2 Clean runways and taxi areas where used by Contractor's equipment.
- .3 Maintain existing site, building, and equipment access for duration of Contract, and make good all damage resulting from Contractor's use.

1.2 STORAGE

- .1 Provide adequate weathertight sheds, with raised floors, for storage of materials, tools, and equipment which are subject to damage by weather.
- .2 Dry storage area, i.e. cable reels (no liquids or containment) as directed by Departmental Representative.

1.3 SANITARY FACILITIES AND WATER SUPPLY

- .1 Sanitary facilities are available in the existing building and can be used by the contractor..
- .2 Post notices and take such precautions as required by local health authorities.
- .3 Keep area and premises in sanitary condition.

1.4 TEMPORARY DUST SCREENS

- .1 Provide temporary dust screens, barriers, warning signs as required for demolition and construction work in accordance with scheduled construction sequence.

1.5 SITE SIGNS AND NOTICES

- .1 Only Project Identification signboards and notices for safety or instruction are permitted on site.
- .2 Format, location, and quantity of site signs and notices shall be approved by Departmental Representative.
- .3 Signs and notices for safety or instructions shall be in English language or commonly understood graphic symbols.
- .4 Maintain signs and notices for duration of Project. Remove and dispose of signs off site on completion of Project.
- .5 No other signs will be permitted on site unless approved by the Departmental Representative.

1.6 PARKING

- .1 Parking will be provided close to the work site at no additional cost.

1.7 COORDINATION

- .1 Coordinate temporary facilities details and services with Departmental Representative prior to delivery to site.

1.8 REMOVAL OF TEMPORARY FACILITIES

- .1 Remove temporary facilities when directed by Departmental Representative or within one (1) week after completion of site works and prior to final acceptance.

1.9 MAKE GOOD

- .1 All site areas utilized by the Contractor for temporary facilities shall be returned to original as-found condition prior to final acceptance. This shall specifically include pavement, concrete, and tiled floors. Any damage shall be repaired to pre-Contract conditions at Contractor's expense.

1.10 CONSTRUCTION LIGHTING

- .1 This clause is required only when nighttime work is necessary on the side of an airfield.
- .2 Supply the necessary temporary lighting to provide an average illumination level of 5 horizontal lux with a uniformity ratio of 2:1.
- .3 Use floodlight units mounted on portable masts spaced along the edge of the work area.
- .4 Fit glare shields to the floodlight units to eliminate any direct illumination between the units and the FSS Tower. These glare shields must be adjustable. If requested by the FSS personnel, adjust shields or reposition the lights to limit glare interference with airport traffic or the town.
- .5 Use mobile engine-driven generator units suitable to power one (1) or a group of lighting units. It must be possible to remove the lights and generators from the edge of the operational areas quickly should emergency use of the area be required.

END OF SECTION

1 GENERAL

1.1 GENERAL

- .1 Provide and maintain temporary markers, barriers, lighted barricades, markings, and delineators to separate construction work from aircraft operations and to ensure that construction workers, plant, and equipment do not encroach on areas that are open to aircraft traffic and on areas outside the boundaries of the contract work.
- .2 Provide adequate delineation of boundary of contract work and areas of aircraft operations to permit safe operations and permit fair and firm enforcement of regulations.
- .3 Provide visual references to limits of operational areas to prevent men or equipment from inadvertently encroaching on areas open to aircraft.

1.2 BARRICADES

- .1 Supply, install, maintain, and, when work is complete, remove barricades on roads and access routes on airside of airport security fence.
- .2 The barriers across the travelled way will consist of traffic barriers.
- .3 Install the barriers at all intersections along the access routes to prevent the workforce from inadvertently trespassing outside the boundaries of the contract area or into areas of airport operations.
- .4 The barricades are to be removed when the access routes are no longer required for the work.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED
REQUIREMENTS

- .1 Section 06 10 00 - Rough Carpentry
- .2 Section 07 27 00.02 - Air Barriers Performances Descriptive
- .3 Section 07 46 13 - Preformed Metal Siding
- .4 Section 07 62 00 - Sheet Metal Flashing and Trim
- .5 Section 07 92 00 - Joint Sealants
- .6 Section 08 22 00 - Fibreglass Reinforced Plastic (FRP) Doors & Frames
- .7 Section 08 36 13.02 - Sectional Metal Doors
- .8 Section 08 50 00 - Windows
- .9 Section 08 71 00 - Door Hardware
- .10 Section 08 80 50 - Glazing
- .11 Section 08 87 53 - Security Films
- .12 Section 09 91 23.01 - Interior Re-painting
- .13 Section 09 97 19 - Painting Exterior Metal Surfaces
- .14 Section 26 50 00 - Lighting

1.2 REFERENCES

- .1 Within text of each specifications section, reference may be made to reference standards.
- .2 Conform to these reference standards, in whole or in part as specifically requested in specifications.
- .3 If there is question as to whether products or systems are in conformance with applicable standards, Departmental Representative reserves right to have such products or systems tested to prove or disprove conformance.
- .4 Cost for such testing will be borne by Departmental Representative in event of conformance with Contract Documents or by Contractor in event of non-conformance in accordance with 01 11 55.24.

1.3 QUALITY

- .1 Products, materials, equipment and articles incorporated in Work shall be new, not damaged or defective, and of best quality for purpose intended. If requested, furnish evidence as to type, source and quality of products provided.
- .2 Procurement policy is to acquire, in cost effective manner, items containing highest percentage of recycled and recovered materials practicable consistent with maintaining satisfactory levels of competition. Make reasonable efforts to use recycled and recovered materials and in otherwise utilizing recycled and recovered materials in execution of work.
- .3 Defective products, whenever identified prior to completion of Work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.
- .4 Should disputes arise as to quality or fitness of products, decision rests strictly with Departmental Representative based upon requirements of Contract Documents.
- .5 Unless otherwise indicated in specifications, maintain uniformity of manufacture for any particular or like item throughout building.
- .6 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.4 STORAGE,
HANDLING AND
PROTECTION

- .1 Handle and store products in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work.
- .3 Store products subject to damage from weather in weatherproof enclosures.
- .4 Store cementitious products clear of earth or concrete floors, and away from walls.
- .5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.

- .6 Store sheet materials, lumber, pre-formed sheet metal and accessories, fiberglass columns on flat, solid supports and keep clear of ground. Slope to shed moisture.
- .7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.
- .8 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.
- .9 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

1.5 TRANSPORTATION

- .1 Pay costs of transportation of products required in performance of Work.
- .2 Transportation cost of products supplied by Owner will be paid for by Departmental Representative. Unload, handle and store such products.

1.6 MANUFACTURER'S INSTRUCTIONS

- .1 Unless otherwise indicated in specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.
- .2 Notify Departmental Representative in writing, of conflicts between specifications and manufacturer's instructions, so that Departmental Representative will establish course of action.
- .3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes Departmental Representative to require removal and re-installation at no increase in Contract Price or Contract Time.

1.7 QUALITY OF WORK

- .1 Ensure Quality of Work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Departmental if required Work is such as to make it impractical to produce required results.
- .2 Do not employ anyone unskilled in their required duties. Departmental Representative reserves right to require dismissal from site of workers deemed incompetent or careless.
- .3 Decisions as to standard or fitness of Quality of Work in cases of dispute rest solely with Departmental Representative, whose decision is final.

1.8 CO-ORDINATION

- .1 Ensure co-operation of workers in laying out Work. Maintain efficient and continuous supervision.
- .2 Be responsible for coordination and placement of openings, sleeves and accessories.

1.9 CONCEALMENT

- .1 In finished areas conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.
- .2 Before installation inform Departmental Representative if there is interference. Install as directed by Departmental Representative.

1.10 REMEDIAL WORK

- .1 Perform remedial work required to repair or replace parts or portions of Work identified as defective or unacceptable. Co-ordinate adjacent affected Work as required.
- .2 Perform remedial work by specialists familiar with materials affected. Perform in a manner to neither damage nor put at risk any portion of Work.

1.11 LOCATION OF
FIXTURES

- .1 Refer to Section 01 00 55.16

1.12 FASTENINGS

- .1 Provide metal fastenings and accessories in same texture, colour and finish as adjacent materials, unless indicated otherwise.
- .2 Prevent electrolytic action between dissimilar metals and materials.
- .3 Use stainless steel fasteners and anchors unless other material is specifically requested in affected specification section.
- .4 Space anchors within individual load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.
- .5 Keep exposed fastenings to a minimum, space evenly and install neatly.
- .6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

1.13 FASTENINGS -
EQUIPMENT

- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.
- .2 Use heavy hexagon heads, semi-finished unless otherwise specified. Use No. 304 stainless steel for exterior areas.
- .3 Bolts may not project more than one diameter beyond nuts.
- .4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.14 PROTECTION OF
WORK IN PROGRESS

- .1 Prevent overloading of parts of building. Do not cut, drill or sleeve load bearing structural member, unless specifically indicated without written approval of Departmental Representative.

1.15 EXISTING
UTILITIES

- .1 When breaking into or connecting to existing services or utilities, execute Work at times directed by local governing authorities, with minimum of disturbance to Work, and/or building occupants and pedestrian and vehicular traffic.
- .2 Protect, relocate or maintain existing active services. When services are encountered, cap off in manner approved by authority having jurisdiction. Stake and record location of capped service.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

END OF SECTION

PART 1 - GENERAL

- 1.1 RELATED REQUIREMENTS
- .1 Section 01 11 55.26
 - .2 Sections 02 to 26.
- 1.2 REFERENCES
- .1 Canadian Construction Documents Committee (CCDC)
- 1.3 PROJECT CLEANLINESS
- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by Owner or other Contractors.
 - .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site, unless approved by Departmental Representative.
 - .3 Clear snow and ice from access to building, bank/pile snow in designated areas only.
 - .4 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
 - .5 Provide on-site containers for collection of waste materials and debris.
 - .6 Provide and use marked separate bins for recycling. Refer to Section 01 74 19 - Construction/Demolition Waste Management and Disposal.
 - .7 Dispose of waste materials and debris off site at transfer station in Sandspit or as indicated in Section 01 74 19.
 - .8 Clean interior areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.
 - .9 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
 - .10 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.

- .11 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .12 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.4 FINAL CLEANING

- .1 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
- .2 Remove waste products and debris other than that caused by others, and leave Work clean and suitable for occupancy.
- .3 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .4 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .5 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .6 Clean and polish interior and exterior faces of glass.
- .7 Remove stains, spots, marks and dirt from decorative work, electrical and mechanical fixtures affected by the work, furniture fittings, walls, floors and exterior cladding affected by the refurbishing work.
- .8 Clean exterior lighting reflectors, lenses, and other lighting surfaces.
- .9 Vacuum clean and dust building interiors, behind grilles, louvres and screens within interior dust enclosures in areas affected by the refurbishing work.
- .10 Remove dirt and other disfiguration from exterior surfaces.
- .11 Sweep and wash clean paved areas around perimeter of the building.
- .12 Clean equipment and fixtures to sanitary condition; clean or replace filters of mechanical equipment.
- .13 Clean roofs, downspouts, and drainage systems.
- .14 Remove debris and surplus materials from accessible concealed spaces.

1.5 WASTE .1 Separate waste materials for recycling in accordance with Section
MANAGEMENT AND 01 74 19 - Construction/Demolition Waste Management And
DISPOSAL Disposal.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

END OF SECTION

1 GENERAL

1.1 SECTION INCLUDES

- .1 Text, schedules, and procedures for systematic Waste Management Program for construction
 - .1 Diversion of Materials

1.2 DEFINITIONS

- .1 Waste Audit (WA): relates to projected waste generation. Involves controlled separation of waste.
- .2 Waste Reduction Workplan (WRW): a written report which addresses opportunities for reduction, reuse or recycling of materials.
- .3 Materials Source Separation Program (MSSP): consists of a series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.

1.3 RELATED SECTIONS

- .1 Section 01 33 00 - Submittal Procedures

1.4 DOCUMENTS

- .1 Maintain at job site, one (1) copy of following documents
 - .1 Recycling List

1.5 MATERIALS SOURCE SEPARATION PROGRAM (MSSP)

- .1 Before project start-up, prepare Materials Source Separation Program and provide separate containers to deposit reusable and/or recyclable materials of the following
 - .1 Gypsum board
 - .2 Metals
 - .3 Wood
 - .4 Plastics
- .2 Other materials as indicated in technical sections.
- .3 Provide on-site facilities for collection, handling, and storage of anticipated quantities of reusable and recyclable materials.
- .4 Locate containers in locations, to facilitate deposit of materials without hindering daily operations.

1.6 DISPOSAL OF WASTES

- .1 Submission of tender is deemed to be confirmation of the fact that the Tenderer has researched the existence of a local recycling centre and has determined if that facility

could accept the materials and quantities that would be expected to be transferred, or alternately has made plans to remove the debris off of the islands.

- .2 Do not bury rubbish or waste materials.
- .3 Do not dispose of waste volatile materials, mineral spirits, paint thinner into waterways, storm sewers, or sanitary sewers.
- .4 Keep records of construction waste in accordance with 01 11 55.25, including:
 - .1 Number and size of bins
 - .2 Waste type of each bin
 - .3 Total tonnage generated
 - .4 Tonnage reused or recycled
 - .5 Reused or recycled waste destination

1.7 SCHEDULING

- .1 Coordinate Work with other activities at site to ensure timely and orderly progress of Work.

2 PRODUCTS

- .1 Not applicable.

3 EXECUTION

- .1 Provide copies of manifests to Departmental Representative to confirm that materials that are intended to be recycled have gone to a transfer station and that the remaining debris has gone to an approved landfill.

3.1 APPLICATION

- .1 Materials in separate condition: collect, handle, store on site, and transport off site to an approved and authorized recycling facility. Provide documentation to Departmental Representative to confirm transfer. Provide documentation to confirm that debris that cannot be recycled has gone to an approved landfill.

3.2 CLEANING

- .1 Remove tools and waste materials on completion of Work, and leave work area in clean and orderly condition.
- .2 Clean up work area as work progresses.
- .3 Source separate materials to be reused/recycled into specified sort areas.

END OF SECTION

1 GENERAL

1.1 SECTION INCLUDES

- .1 Project Record Drawings, samples and specifications.
- .2 Equipment and systems.
- .3 Product data, materials and finishes, and related information.
- .4 Operation and maintenance data.
- .5 Spare parts, special tools and maintenance materials.
- .6 Warranties and bonds.
- .7 Final site survey.

1.2 SUBMISSION

- .1 Prepare instructions and data using personnel experienced in maintenance and operation of described products.
- .2 Copy will be returned with Departmental Representative's comments.
- .3 Revise content of documents as required prior to final submittal.
- .4 Two (2) weeks prior to Substantial Performance of the Work, submit to the Departmental Representative four final copies of operating and maintenance manuals in English.
- .5 Ensure spare parts, maintenance materials, and special tools provided are new, undamaged or defective, and of same quality and manufacture as products provided in Work.
- .6 If requested, furnish evidence as to type, source and quality of products provided.
- .7 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.
- .8 Pay costs of transportation.

1.3 FORMAT

- .1 Organize data in the form of an instructional manual and provide in electronic PDF format.
- .2 Binders: vinyl, hard covered, 3 D-ring, loose leaf, 219mm x 279mm, with spine and face pockets.
- .3 When multiple binders are used, correlate data into related consistent groupings. Identify contents of each binder on spine.

- .4 Cover: Identify each binder with typed or printed title 'Project Record Documents', list title of project and identify subject matter of contents.
- .5 Arrange content by system under section numbers and sequence of Table of Contents.
- .6 Text: Manufacturer's printed data, or typewritten data.
- .7 Drawings: provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

1.4 CONTENTS – EACH VOLUME

- .1 Provide Table of Contents including
 - .1 Title of project
 - .2 Date of submission
 - .3 Name, addresses, and telephone numbers of Departmental Representative and Contractor with name of responsible parties
 - .4 Schedule of products and systems, indexed to content of volume.
- .2 For each product or system, list names, addresses and telephone numbers of subcontractors and supplies, including local source of supplies and replacement parts.
- .3 Product Data: mark each sheet to clearly identify specific products and component parts, and data applicable to installation; delete inapplicable information.
- .4 Drawings: supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.

1.5 PROJECT RECORD AND SAMPLES

- .1 In addition to requirements in General Conditions, maintain at the site for Departmental Representative one record copy of
 - .1 Contract Drawings
 - .2 Specifications
 - .3 Addenda
 - .4 Change Orders and other modifications to the Contract
 - .5 Reviewed shop drawings, product data, and samples
 - .6 Field test records
 - .7 Inspection certificates
 - .8 Manufacturer's certificates

- .2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT record" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by Departmental Representative.

1.6 RECORDING ACTUAL SITE CONDITIONS

- .1 Record information on set of opaque drawings provided by Departmental Representative.
- .2 Provide felt tip marking pens for recording information, maintaining separate colours for each major system.
- .3 Record information concurrently with construction progress. Do not conceal work until required information is recorded.
- .4 Contract Drawings and shop drawings: legible mark each item to record actual construction, including
 - .1 Measured depths of elements of foundation in relation to finish first floor datum
 - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - .4 Field changes of dimension and detail.
 - .5 Changes made by change orders.
 - .6 Details not on original Contract Drawings.
 - .7 References to related shop drawings and modifications.
- .5 Specifications: legible mark each item to record actual construction, including
 - .1 Manufacturer, trade name and catalogue number of each product actually installed, particular optional items and substitute items.
 - .2 Changes made by Addenda and change order.
- .6 Other Documents: maintain manufacturer's certifications, inspections certifications, field test records required by individual specifications sections.

1.7 FINAL SURVEY

- .1 Submit final site survey certificate certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.

1.8 EQUIPMENT AND SYSTEMS

- .1 Each Item of Equipment and Each System: include description of unit system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
- .2 Panelboard circuit directories: provide electrical service characteristics, controls, and communications.
- .3 Include installed colour-coded wiring diagrams.
- .4 Operating Procedures: included startup, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shutdown, and emergency instructions. Include summer, winter and any special operating instructions.
- .5 Maintenance Requirements: include routine procedures and guide for troubleshooting; disassembly, repair and re-assemble instructions; and alignment, adjusting, balancing and checking instructions.
- .6 Provide servicing and lubrication schedule and list of lubricants required.
- .7 Include manufacturer's oriented operation and maintenance instructions.
- .8 Include sequence of operation by controls manufacturer.
- .9 Provide original manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance.
- .10 Provide installed control diagrams by controls manufacturer.
- .11 Provide list of original manufacturer's spare parts, current prices and recommended quantities to be maintained in storage.
- .12 Include test and balancing reports.
- .13 Additional requirements: as specified in individual specification sections.

1.9 MATERIALS AND FINISHES

- .1 Building products, applied materials, and finishes: include product data, with catalogue number, size, composition, and colour and texture designations. Provide information for re-ordering custom manufactured products.

- .2 Instructions for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning maintenance.
- .3 Moisture-protection and weather-exposed products: include manufacturer's recommendation for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- .4 Additional requirement: as specified in individual section of these Specifications.

1.10 MAINTENANCE MATERIALS

- .1 Provide maintenance and extra materials, in quantities specified in individual specification sections
- .2 Provide items of same manufacture and quality as items in Work.
- .3 Deliver to site; place and store.
- .4 Receive and catalogue all items. Submit inventory listing to Departmental Representative. Include approved listings in Maintenance Manual.
- .5 Obtain receipt for delivered products and submit prior to final payment.

1.11 SPECIAL TOOLS

- .1 Provide special tools, in quantities specified in individual specification section.
- .2 Provide items with tags identifying their associated function and equipment.
- .3 Deliver to site location as directed; place and store.
- .4 Receive and catalogue all items. Submit inventory listing to Departmental Representative. Include approved listing in Maintenance Manual.

1.12 STORAGE, HANDLING AND PROTECTION

- .1 Store spare parts, maintenance materials, and special tools in manner to prevent damage or deterioration.
- .2 Store in original and undamaged condition with manufacturer's seal and labels intact.
- .3 Store components subject to damage from weather in weatherproof enclosures.
- .4 Store paints and freezable materials in heated and ventilated room.
- .5 Remove and replace damaged products at own expense and to satisfaction of Departmental Representative.

1.13 WARRANTIES AND BONDS

- .1 Separate each warranty or bond with index tab sheets keyed to Table of Contents listing.
- .2 List subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
- .3 Obtain warranties and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, with ten (10) days after completion of the applicable item of work.
- .4 Except for items out into use with Departmental Representative's permission, leave date of beginning of time of warranty until the Date of Substantial Performance is determined.
- .5 Verify that documents are in proper form, contain full information, and are notarized.
- .6 Co-execute submittals when required.
- .7 Retain warranties and bonds until time specified for submittal.

1.14 COMPLETION

- .1 Submit a written certificate that the following have been performed
 - .1 Work has been completed and inspected for compliance with the Contract Documents.
 - .2 Defects have been corrected and deficiencies have been completed.
 - .3 Equipment and systems have been tested, adjusted, and balanced and are fully operational.
 - .4 Certificates required by the Fire Engineering Services – HRSDC and utility companies have been submitted.
 - .5 Operation of systems has been demonstrated to the personnel indicated by the Departmental Representative.
 - .6 Work is complete and ready for final inspection.

END OF SECTION